

TURF COVER APPARATUS & METHOD

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Field of the Invention

The present invention relates generally to a turf cover apparatus. More particularly, the present invention relates to a turf cover having a two cover structure to protect and insulate a golf course green in adverse weather conditions.

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Background of the Invention

A variety of outdoor covers are used for protecting growing outdoor surfaces such as plant and seed beds, golf course greens, sports playing fields, and other outdoor ground surfaces. Such covers have employed many approaches for providing suitable protection of these surfaces, while permitting the surfaces to live and grow.

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For example, previous outdoor covers include structures used to insulate and provide air circulation to a covered surface. U.S. Patent No. 617,034 to Merriman discloses a plant protector having a foundation with a layer of pine straw or pine needles that lay upon the foundation. A cover frame is connected to the foundation so as to have the protective layer of pine straw or pine needles secured in between. To allow for air circulation, the plant protector is elevated over the surface or plant(s) to be covered.

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Other covers provide designs for allowing passage of sunlight through a cover so as to permit growth of the protected ground surface.

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U.S. Patent No. 3,863,387 to Webster et al. discloses a ground protection cover having translucent panels connected together with an expanded slab of polystyrene filled between the panels. The cover intends to provide a lightweight cover that allows sunlight to pass through the translucent structure permitting growth of the surface, particularly a golf course green.

Still other covers have provided multilayer structures for protecting a growing outdoor surface. U.S. Patent No 3,252,251 to Simmons discloses a seed or plant bed cover, which includes two superimposed laminated layers. A first layer is plastic and pervious to light, which resides on the top of the cover. The first plastic
5 layer is laminated together with a second fabric layer. The cover intends to provide protection of a seed or plant bed in a plant growth period during which germination and first growth occur. The first layer of the cover is peelable after this first growth period leaving the fabric layer to cover the seed or plant bed. The fabric layer after being delaminated allows for free air circulation providing suitable shade, and may be
10 maintained as a cover for an additional time until, for instance, the plants are transplanted to another location.

Further, U.S. Patent No. 5,047,099 to Caldwell discloses a mulch material for preventing growth of plants from the ground being covered, and controls moisture penetration to the covered ground while retaining moisture within the covered
15 ground. The mulch material includes a top layer of polymeric material and a fabric layer connected underneath the top layer. The cover prevents growth of a covered ground and provides a decorative appearance by controlling moisture and air penetration to and from the ground.

Although these devices may be suitable for their intended uses,
20 improvements may still be made in providing a turf cover that can protect a ground surface. Existing cover designs still do not provide optimum protection and insulation from adverse weather conditions, such as wind and ice, while preventing premature rehydration of a ground surface including plants and grass. There is a need for maintaining life plants and grasses of a covered ground surface in a dormant state. Furthermore, there
25 is still a need for a turf cover for ground surfaces, such as for covering golf course greens and natural grass, which is durable and inexpensive to produce. A turf cover is needed that can be maintained on a ground surface for an extended amount of time, in a wide range of climates, and through seasonal changes without harming growth from the ground surface.

Summary of the Invention

In accordance with the principles of the present invention, improvements upon existing designs have been made for protecting a growing outdoor surface, such as a golf course green. A turf cover apparatus is provided with a two cover structure
5 having an insulating layer between the two covers.

In one embodiment of the present invention, a turf cover apparatus includes a first cover disposed at a bottom of the turf cover apparatus. The first cover is adaptable so as to rest on a ground surface to be covered by the turf cover apparatus. A second cover is connected with the first cover. The second cover is disposed at a top of
10 the turf cover apparatus. At least one insulating layer resides between the first cover and the second cover.

Preferably, the first cover is structured and configured of a mesh material that allows air circulation and entry of moisture to reach the surface being covered. The second cover preferably is structured and configured of a substantially chemical and
15 moisture resistant material so as to protect the surface being covered. Preferably, the insulating layer is structured and configured of an organic material that enables control of air circulation and prevents entry of moisture to the surface being covered.

Preferably, the turf cover apparatus is securable to the ground surface.

Preferably, the ground surface to be covered is a golf course green.

20 In one embodiment of the turf cover apparatus, the first cover is arranged and configured so that it lays directly on the ground surface and is made of a high tensile polyester mesh material.

In one embodiment of the turf cover apparatus, the second cover is arranged and configured so that it faces the external environment above the ground
25 surface and is made of a polyethylene material. Preferably, both sides of the second cover are coated with the polyethylene material.

In one embodiment of the turf cover apparatus, the insulating layer is arranged and configured of an organic material preferably having a thickness of about 4-6 inches between the first and second covers. Preferably, the insulating layer is
30 chopped straw.

In one embodiment of a turf cover apparatus, the first cover and the insulating layer make up an insulation system where entry of moisture is prevented and air circulation is permitted to the ground surface. The second cover and insulating layer block entry of moisture to protect the ground surface, and maintain the ground surface in a dormant state without harming future growth from the ground surface. Preferably, air circulation is permitted through sides and the bottom of the turf cover apparatus to reach the ground surface.

In another embodiment of the present invention, a method for covering an outdoor ground surface includes providing a turf cover apparatus according to the principles defined above. The turf cover apparatus is applied onto the ground surface. Using the first cover and insulating layer, air is circulated through the turf cover apparatus, and is allowed to reach the ground surface. Preferably, the first cover enables air to contact the ground surface through the sides and bottom of the turf cover apparatus. The insulating layer insulates the ground surface, and the organic material controls air circulation through the turf cover apparatus. Using the second cover, moisture is prevented from entering the top of the turf cover apparatus.

The present invention provides a turf cover with improved protection and insulation characteristics. For example, the structure of the top second cover provides suitable protection of the ground surface, such as a golf course green, and prevents moisture and chemicals from penetrating the second cover. The insulation system enables air circulation through the sides and bottom of the turf cover. Further, employing organic insulation facilitates control of air circulation and has the ability to prevent entry of moisture, such as employing chopped straw that can wick away any unwanted moisture and hold air in the stems. The present invention protects a ground surface from adverse weather conditions, and prevents premature rehydration of a ground surface so as to maintain life of the ground surface in a dormant state. Such a structure for a turf cover also provides an inexpensive design that is durable and convenient for use.

A variety of additional advantages and objects of the invention will be set forth in part in the description which follows, and in part will be obvious from the description, or may be learned by practice of the invention. The advantages of the

invention will be realized and attained by means of the elements and combinations particularly pointed out in the claims. It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory only and are not restrictive of the invention as claimed.

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Brief Description of the Drawings

Referring now to the drawings in which like reference numbers represent corresponding parts throughout:

Figure 1 represents a top view of one embodiment of a turf cover apparatus in accordance with the principles of the present invention.

Figure 2 represents a side perspective view of the turf cover apparatus of Figure 1 showing the turf cover apparatus in a partially opened state.

Figure 3 represents a partial top view of the turf cover apparatus of Figure 1.

Figure 4 represents a schematic partial sectional view of the turf cover apparatus in accordance with the principles of the present invention.

Detailed Description of the Preferred Embodiment

In the following description of the illustrated embodiments, reference is made to the accompanying drawings that form a part hereof, and in which is shown by way of illustration of the embodiments in which the invention may be practiced. It is to be understood that other embodiments may be utilized as structural changes may be made without departing from the spirit and scope of the present invention.

The present invention is directed to a turf cover apparatus that includes two separate and distinctly constructed covers fastened together. At least one insulating layer is disposed and secured between the two covers.

Figures 1-3 illustrate one preferred embodiment of a turf cover apparatus in accordance with the principles of the present invention. Figure 1 illustrates a top view of the turf cover apparatus in a fastened state. A first cover 20 (shown in Figure 2) is disposed and resides at a bottom 12 of the turf cover apparatus 10. The first cover 20

is adaptable to rest on a ground surface that is to be covered by the turf cover apparatus 10. The ground surface preferably is a golf course green. It will be appreciated that the turf cover apparatus 10 is not limited to this preferred application, as it can be used to cover other surfaces needing protection for plants and grasses. A second cover 30 is
5 disposed at a top 14 of the turf cover apparatus 10 and is fastened to the first cover 20. Preferably, the first and second covers 20, 30 generally correspond in size and shape with each other. An insulating layer 40 is disposed between the first and second covers 20, 30, and is further discussed below.

Preferably in assembly, the second cover 30 is secured with the first
10 cover 20 using a fastening means. In one preferred example, the fastening means include a plurality of grommets 32, which are spaced evenly about an outer perimeter 34 of the second cover 30. Preferably, the grommets 32 are a brass material and are a No. 2 size. It will be appreciated that other sizes and other materials also may be used for the grommets 32, such as stainless steel, plastic, etc. A corresponding plurality of
15 looped ropes 52 fixed along an outer edge 24 of the first cover 20 can be inserted through the grommets 32 of the second cover 30. Preferably, the loops 52 are a nylon material 0.25 inches thick. It will be appreciated that other materials and sizes for the loops 52 also may be employed.

The first and second covers 20, 30 can be fastened by taking one of the
20 loops 52 inserted into a grommet 32 and passing it through an adjacent loop 32. This is repeated with each adjacent loop along the perimeter 34 of the second cover 30 and the outer edge 24 of the first cover 20 until the last rope is encountered, which can be tied 56 to the rope beginning the fastening of the first and second covers 20, 30. This configuration is shown in the partial view of Figure 3.

25 As best shown in Figure 2, the turf cover apparatus 10 can be secured to a ground surface. Preferably, the first cover 20 includes its own plurality of grommets 22 disposed about the outer edge 24 of the first cover 20. Preferably, the grommets 22 are a brass material, and are a No. 2 size spaced apart about every 18 inches around the outer edge 24 of the first cover 20. It will be appreciated that other sizes and other
30 materials also may be used for the grommets 22, such as stainless steel, plastic, etc.

Preferably, the outer edge 24 of the first cover 20 includes a width of 1.5 inches of heat sealable webbing for reinforcement. Spikes 54 are insertable into the grommets 22 and can penetrate the ground surface to secure the turf cover apparatus 10 to the ground surface. Preferably, each of the spikes 54 includes a flat head so as to limit the insertion
5 of the spikes 54 into the grommets 22, and includes a sharpened end drivable into the ground.

It will be appreciated that the present invention is not limited to the grommet and loop configuration as illustrated, as other well known structures may be employed for fastening together two planar covers and securing the same to a ground
10 surface.

The structure of the turf cover apparatus 10 is discussed below. The turf cover apparatus 10 provides a structure that protects and insulates the ground surface it covers. Preferably, the turf cover apparatus 10 protects the ground surface from wind and ice that can be detrimental to plants and grasses on the ground surface. More
15 preferably, the turf cover apparatus 10 maintains life of the ground surface by preventing entry of moisture that can lead to premature rehydration of the plants and grasses. Moisture is prevented from entering and rehydrating the crowns of such plants and grasses of the ground surface. As one preferred example, this protection and insulation would be desirable during winter-like conditions.

20 The first cover 20 is structured and configured of a mesh material that allows air circulation through the bottom 12 so as to reach the ground surface. Preferably, the first cover 20 lays directly on the ground surface and is made of a high tensile polyester mesh material. It will be appreciated that other materials also may be employed to provide similar air circulation and durability properties.

25 The second cover 30 is arranged and configured so that it faces the external environment above the ground surface. The second cover 30 is constructed of a substantially chemical and moisture resistant material so as to protect the ground surface being covered. Preferably, the second cover 30 is constructed of a material that is impervious to light. More preferably, the second cover 30 is made of a lightweight
30 polyethylene material, and is coated on both sides with a polyethylene material.

Preferably, the second cover 30 is about 10oz. It will be appreciated that other materials and masses also may be employed that provide the desired properties. It will be further appreciated that the turf cover apparatus 10 can employ a total weight suitable for covering a ground surface without harming the covered ground surface.

5 Also illustrated in Figure 2, at least one insulating layer 40 is disposed between the first and second covers 20, 30. The insulating layer 40 is arranged and configured of an organic material with a thickness 42 suitable for providing insulation and air circulation through the sides of the turf cover apparatus 10. Preferably, the insulating layer 40 has approximately a 4-6 inch thickness. More preferably, the
10 insulating layer 40 is constructed of an organic material being a chopped straw material. The thickness 42 enables control of air circulation into the sides of the turf cover apparatus 10 through the first cover 20 and the bottom 12 of the turf cover apparatus.

Figure 4 illustrates a schematic of the first cover 20, insulating layer 40 and second cover 30. As above, one preferred organic material for the insulating
15 layer 40 is chopped straw. Employing chopped straw provides the ability of the insulating layer 40 to wick away any unwanted moisture that may attempt to enter from the sides, while holding air in the stems of the chopped straw material to provide the air circulation to the ground surface. It will be appreciated that other organic materials also may be suitable for use in the insulating layer 40. Preferably, the organic material is a
20 disposable material, and after use it can be discarded such that no storage is necessary.

The first cover 20 and the insulating layer 40 form an insulation system, where entry of moisture is prevented, and controlled air circulation permits air to reach the ground surface. Preferably, air is allowed entry at sides of the turf cover apparatus 10 and through the bottom 12 to reach the ground surface. The second top cover 30 is
25 substantially chemical and moisture resistant to protect the ground surface being covered. As above in this configuration, the ground surface (including plants and grasses) is suitably protected while remaining in a dormant state, while premature rehydration is prevented until the turf cover apparatus 10 is removed. Preferably, the turf cover apparatus 10 resembles the insulating effect of a thickness of snow coverage

during winter-like conditions, while also protecting the ground surface from entry of moisture and adverse weather conditions, such as wind and ice.

In one preferred embodiment of a method for covering an outdoor ground surface, a turf cover apparatus as described and detailed above is provided.

5 Preferably, the ground surface is a golf course green. The turf cover apparatus is applied onto the ground surface. Preferably, the first cover is applied directly onto the ground surface and is in contact therewith. Using the first cover, air is circulated so as to reach the ground surface. Using the insulating layer, the ground surface is insulated. The insulating layer controls the air circulation and prevents moisture contact with the
10 ground surface, using the organic material structure of the insulating layer.

Preferably, air is allowed entry through sides and the bottom of the turf cover apparatus. Further, the organic material of the insulating layer prevents entry of any unwanted or excess moisture, while providing support for air therein. For example, using an organic material of chopped straw has the ability to wick away any unwanted
15 moisture and can hold air in the stems.

Using the second cover and the insulating layer, moisture is prevented from entering the top of the turf cover apparatus. The ground surface is covered with the turf cover apparatus thereby protecting the ground surface while maintaining plants and grasses of the covered ground surface in a dormant state. As above, the ground
20 surface, including plants and grasses, can be suitably protected while remaining in a dormant state, where premature rehydration is prevented until the cover is removed. Preferably, the turf cover apparatus resembles the insulating effect of a thickness of snow coverage during winter-like conditions, while also protecting the ground surface from entry of moisture and adverse weather conditions including wind and ice.

25 As above, the present invention provides the advantages of an improved turf cover that provides a structure suitable for protection of the ground surface, such as a golf course green. The present invention prevents moisture and chemicals from penetrating the second cover and insulating layer. The insulation system, which includes the insulating layer and the first cover, controls air circulation by entry through
30 the sides and bottom and prevents entry of moisture. Further, employing organic

insulation, such as chopped straw, facilitates control of air entry by holding air in its stems, and has the ability to wick away any unwanted moisture. Such a structure for a turf cover also provides an inexpensive design that is durable and convenient for use. Moreover, this configuration provides a turf cover that can be maintained on a ground
5 surface for an extended amount of time, in a wide range of climates, and through seasonal changes without harming future growth of the ground surface.

The above specification, examples and data provide a complete description of the manufacture and use of the composition of the invention. Since many embodiments of the invention can be made without departing from the spirit and scope
10 of the invention, the invention resides in the claims hereinafter appended.